AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method for ~~determination of a parameter of a system generating a signal containing information about the parameter~~analysing a transient in a sound signal, the method comprising the step of short time transforming the signal substantially in accordance with

$$L(\sigma,\omega,t)=\int_{o}^{t} v_i(t-\lambda)e^{-(\sigma+j\omega)\lambda+\varphi}d\lambda$$

in which v_i is the sound signal, L is the transformed signal, σ is a time constant, ω is an angular frequency, and φ is a phase.

2. (Original) A method according to claim 1, wherein the step of transforming comprises filtering the signal v_i with a filter having a pole at $\sigma + j\omega t$ and a pole at $\sigma - j\omega t$.

3. (Original) A method according to claim 1 or 2, comprising steps of transforming the signal v_i for a plurality of sets of σ and ω values.

4. (Previously Presented) A method according to claim 1, further comprising the step of determining a maximum of at least one transformed signal $L(\sigma,\omega,t)$.

5. (Previously Presented) A method according to claim 1, further comprising the step of comparing transformed signals L with corresponding reference signals in order to determine parameters of the system.

6. (Previously Presented)A method according to claim 1, further comprising a step of pre-processing the signal before the step of short time transforming, the pre-processing being selected from the group consisting of filtering, rectification, differentiation, integration, and amplification.

7. (Previously Presented) A method of transmitting a signal containing information of a set of parameters of a system generating the signal, comprising processing the signal according to claim 1 and further comprising the step of transmitting the determined parameter values.

8. (Original) A method according to claim 7 further comprising the step of generating a copy of the signal from the transmitted parameter values.

9. (Previously Presented) A method of transmitting a signal containing information of a set of parameters of a system

generating the signal, comprising processing the signal according to claim 1 and further comprising the steps of

comparing the signal with a library of signals generated for a predetermined set of parameter values by the system,

selecting the library function that constitutes the best match to the signal, and

transmitting an identification signal that identifies the matching library function.

10. (Original) A method according to claim 9, further comprising the steps of receiving the identification signal and generating the corresponding library signal.

11. (Previously Presented) A method of classifying a system according to one or more parameters of the system generating a signal containing information about the one or more parameters, comprising determining the one of more parameters according to claim 1 and further comprising the step of classifying the system in accordance with the one or more determined parameters into one class of a set of predefined classes defined by predetermined ranges of values of the parameters.

12. (Previously Presented) A method for communicating an auditory signal, comprising processing the signal by the method

according to claim 1, transmitting the processed signal, and receiving the processed signal by a receiver.

13. (Original) A method according to claim 12, wherein, prior to transmission of the processed signal, the signal is coded into a digital representation, and the coded signal is decoded in the receiver so as to reestablish transient pulse shapes perceived by an animal ear such as a human ear as representing the distinct sound pictures of the auditory signal.

14. (Original) A method according to claim 13, wherein the digital transmission is performed at a bandwidth of at the most 4000 bits per second.

15. (Original) A method according to claim 14, wherein the bandwidth is at the most 2000 bits per second.

16. (Original) A method according to claim 15, wherein the bandwidth is in the interval of 800-2000 bits per second.

17. (Original) A method according to any of claims 13-16, wherein a second and further pulses in a sequence of identical pulses are represented by a digital value indicating repetition.

18. (Previously Presented) A method according to claim 1, comprising filtering the signal v_i in a filter bank comprising a plurality of band-pass filters interconnected in parallel with centre frequencies ranging from 1400 Hz to 6500 Hz, each of which is connected in series with an envelope detector and a filter bank comprising a plurality of low-pass filters interconnected in parallel and having cut-off frequencies ranging from 300 Hz to 3000 Hz and time constants σ ranging from 1500 s^{-1} to 12000 s^{-1}.

19-22. (Cancelled)

23. (New) A method for analysing a sound signal ($v_i(t)$) having an input frequency-bandwidth, the method comprising:

providing a first plurality of signals each representing a distinct, frequency-bandwidth limited portion of the input signal, and

for each of the first plurality of signals performing the following step:

providing a signal representing an envelope thereof in the time domain, wherein the method further comprises, for each signal representing an envelope:

providing a second plurality of signals ($O_{ij}(t)$) each representing a distinct frequency bandwidth-limited portion of the signal representing an envelope.

24. (New) A method according to claim 23 further comprising, for each signal representing an envelope:

providing a signal representing the envelope differentiated with respect to time, and

for each signal representing an envelope differentiated with respect to time providing the second plurality of signals ($O_{ij}(t)$).

25. (New) A method according to claim 23 wherein each signal representing an envelope is obtained by

rectifying the corresponding frequency bandwidth-limited portion of the input signal, and

low-pass filtering the rectified signal.

26. (New) A method according to claim 25 wherein each of the first plurality of signals representing distinct frequency bandwidth-limited portions of the input signal has a bandwidth corresponding to a bandwidth of a bandpass filter of the human cochlea.

27. (New) A method according to claim 26 wherein the bandwidths of the first plurality of signals have center frequencies ranging from 1400 Hz to 6500 Hz.

28. (New) A method according to claim 23 wherein each of the second plurality of signals ($O_{ij}(t)$) has a center frequency in the range of 300 Hz to 3000 Hz.

29. (New) A method according to claim 23 wherein each signal representing an envelope is obtained by

performing a Hilbert transformation of the corresponding frequency bandwidth-limited portion of the input signal.

30. (New) A method according to claim 23 wherein the sound signal is a human speech signal.

31. (New) A method according to claim 30 used for identifying vowels in the human speech signal.

32. (New) A method according to claim 23 wherein the sound signal is generated by an industrial product.